



Department
for Transport

Appraisal and Modelling Strategy

A route map for updating TAG during uncertain times

Moving Britain Ahead



July 2020

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Foreword

Since we published our Appraisal and Modelling Strategy last year, several unexpected events have occurred that could have a significant impact on transport scheme appraisals. These include the COVID-19 pandemic, a revised fiscal and economic outlook, the Green Book review with its focus on levelling-up and the government's commitment to net zero and the transport decarbonisation plan. These issues present both challenges and opportunities as we continue to develop our appraisal framework to support ambitious government objectives whilst encouraging flexible and proportionate appraisals.

This Route map sets out the approach we plan to take over the coming year to gain a better understanding of these issues and manage their combined implications for appraisal. We intend to provide a consolidated update to our appraisal guidance early in 2021 to recognise the value of combining significant updates where feasible and the importance of having the best available evidence to support decision making.

As ever, engaging and consulting with our stakeholders and partners is paramount and we look forward to working together to respond to these challenges.



Amanda Rowlett, Chief Analyst

July 2020

Executive summary

Introduction

- 1 Our Appraisal and Modelling Strategy (AMS) of April 2019 set out our plans to improve the appraisal and modelling evidence base over a five-year period. We continue to develop the important work in this programme to further strengthen the appraisal framework and the transport models that inform scheme assessments.
- 2 Since publication of the AMS, several unexpected events have occurred that have the potential to have a significant impact on scheme appraisals and are likely to come to a point over the year where we will need to take account of these in the evidence base or methods used within our Transport Analysis Guidance (TAG).

Looking ahead: aims of this route map

- 3 This document describes the strategic approach we are taking to change management over the course of the year. This approach aims to resolve these interlinked issues, and potentially other emerging issues in the round, to provide a consolidated update to TAG at an appropriate time, balancing the risk of disruption to ongoing analytical work with having the best available evidence to support decision-making.
 - **Aligning the timing of changes:** We will provide stability in the appraisal framework in 2020/21 by communicating our intentions for managing these changes to allow robust planning of future appraisal work. We plan to have a consolidated release of TAG updates in February 2021.
 - **Considering interlinked issues in the round:** Many of the issues under consideration are linked and will be most effectively resolved through a strategic approach which reflects these interdependencies.
 - **Providing clarity and support ahead of release:** We shall hold a series of events and, where appropriate, consultations around the key issues and what users may expect to come into guidance and when, giving clear sight of progress and changes well in advance.

Scope of appraisal issues and how we will respond

Appraisal in a changing environment

- 4 We describe how we propose to reflect and incorporate emerging evidence into appraisal of the long-term.
 - **Accounting for projected lower economic growth:** The March 2020 OBR long-term economic projections of GDP per capita growth, combined with the subsequent revision of medium-term growth in the July 2020 OBR Fiscal Sustainability Report to take into account COVID-19 impacts, represent a significant reduction compared to any previous update. We have published a

Forthcoming Change notice for the TAG data book with the new values. Promoters are expected to undertake sensitivity testing or introduce the evidence into new model development work in anticipation that this will be made definitive guidance. Appropriate weight, reflecting its planned status as the GDP assumptions to be used in the reference case, should be placed on this sensitivity test in business cases.

- **Tackling uncertainty:** We plan to provide further detail on the use of scenarios, using the Uncertainty Toolkit to set out guidance on when and how scenarios should be used and presented as part of business cases, as well as wider advice on the proportionate treatment of uncertainty in appraisal and modelling. We will be developing scenarios in-house that aim to effectively capture the additional uncertainties associated with potential impacts of COVID-19 over the long-term.
- **Setting an appropriate appraisal period:** We plan to launch a consultation on the length of the appraisal period over the Summer, covering all modes and types of scheme.
- **Re-examining our appraisal methods:** The less optimistic long-term economic outlook and planned consultation on the appraisal period raises some fundamental questions about how we profile and value costs and benefits across the appraisal period. We will consider whether any changes might be appropriate.
- **Improving evidence on scheme cost uncertainty:** We are close to finalising the optimism bias research outlined in the AMS. We are planning to update TAG in parallel with other changes, to reflect the findings of this research.

Transformational impacts and levelling up

- 5 We describe how we propose to support the HMT Green Book review, provide improved guidance around supporting levelling-up objectives in appraisals and enhance our methods of capturing these impacts.
- **Accounting for levelling-up:** The HMT Green Book Review intends to conclude alongside the next Spending Review. We would work to incorporate any TAG changes required in light of the review as soon as reasonably possible. In the meantime, we will support scheme promoters in using the flexibilities that already exist within TAG to make the case for schemes which support levelling up objectives.

Environmental impacts

- 6 We describe how we are supporting the Transport Decarbonisation Plan and improving evidence on wider environmental issues to ensure prominence of these impacts in appraisals.
- **Reducing greenhouse gas emissions:** We have published a Forthcoming Change notification setting out the expectation that all appraisals should use the existing high carbon values¹ until new values are developed by BEIS and released into TAG. Scheme business cases should test the impact of these values as a sensitivity test, in combination with an updated OBR sensitivity test where appropriate. We intend to update the vehicle mix forecasts to be used in appraisal this year using the latest evidence and based on current policies, including updated electric vehicle and fuel efficiency forecasts.

¹ The existing high carbon values are currently provided alongside existing central and low values in the TAG Data Book.

- **Accounting for the value of the natural environment:** We will publicly consult on our proposals to improve the methodology for estimating landscape values in appraisal, with a view to providing updated guidance in TAG. In parallel, we will also outline our plans to consult on the introduction of an Ecosystem Services approach to environmental impact appraisal.

Engagement and consultation

- 7 Close engagement with our stakeholders will be more important than ever as we work together to address these challenges and continue to progress the AMS programme. We intend to hold a series of digital events in the Autumn to share progress and emerging evidence, and an additional event to discuss the forthcoming changes that we have developed over the year to accompany their formal release. We have also identified bespoke consultations to run in the Summer and Autumn. We will publicise these events sufficiently in advance.

Accounting for other emerging evidence

- 8 Sensitivity testing is a useful way of providing insight on the potential impacts of emerging evidence, so that decision-makers can have a wider sense of the potential impact of change on their considerations. As well as taking into account new evidence on long-term economic growth and carbon values, scheme promoters may wish to work with their scheme sponsors to develop their own sensitivity tests, to account for the likely impact of potential changes that may occur in the future that may be important to examine at certain stages of business case development. Our engagement events and further publications will also help guide appraisal practitioners in formulating potential tests in line with the evidence emerging from the issues described in this route map.

1. Adapting in a background of significant change

The Appraisal and Modelling Strategy

- 1.1 In April 2019 we published our Appraisal and Modelling Strategy (AMS)². *This set out our plan to address key issues in appraisal and transport modelling practice over a five-year horizon. This was based on extensive consultation with our stakeholders and partners.* These activities continue with the view to providing high quality, up-to-date guidance and tools to support investment decisions through providing high quality analysis.
- 1.2 The aim of our Appraisal and Modelling Strategy is to provide robust, flexible and easy to use modelling and appraisal tools that can be used to inform the critical policy decisions which will be made over this period and beyond. We seek to achieve this aim via the following broad objectives:
 - Supporting transport analysis in a climate of devolved decision making, by facilitating promoters to prepare proportionate analysis in business cases and encouraging innovation where appropriate.
 - Developing the transport analysis guidance and tools to provide the evidence base for transport investment decisions, targeting the most significant evidence gaps and ensuring decision-makers are presented with the information they need;
 - Working collaboratively with our partners and stakeholders to deliver the breadth of enhancements to the evidence base, methods and data.
- 1.3 The strategy seeks to progressively improve the evidence base starting with a series of quick wins, followed by addressing a number of longer term challenges. We continue to develop important work to further strengthen the appraisal framework and the transport models that inform scheme assessments.

A changing world

- 1.4 Since publication of the AMS, several unexpected events have occurred on the national and global stage that warrant investigation as to how development of the appraisal framework may need to adapt. These events all have the potential to have a considerable bearing on scheme appraisals and are likely to come to a point over the year where we will need to take account of these in the evidence base or methods used within our Transport Analysis Guidance (TAG).
- 1.5 These events may provide both challenges and opportunities. They also allow us to reflect on how to support ambitious objectives such as decarbonisation, levelling-up and the impact of future technologies, whilst also supporting those undertaking

² <https://www.gov.uk/government/consultations/transport-appraisal-and-modelling-strategy-informing-future-investment-decisions>

appraisals through considering and researching these challenges and providing guidance on how appraisals can best adapt in a proportionate way.

A revised economic and fiscal outlook

- 1.6 As part of the Spring Budget of 2020³, the Office for Budgetary Responsibility (OBR) published a revised economic and fiscal outlook⁴ and associated forecasts of the UK economy⁵ in the long-term. On 14th July, OBR published the 2020 Fiscal Sustainability Report⁶, updating medium-term growth forecasts to 2024 to take into account COVID-19 impacts.
- 1.7 The corollary of these forecasts for appraisal is that forecast productivity and income growth is projected to be significantly lower than those previously published. Growth and productivity in the future is an important factor in assessing the benefits of transport intervention, both in terms of serving the transport user and in terms of unlocking the economic potential of regions and providing the necessary housing to support future growth.

The COVID-19 pandemic

- 1.8 The uncertainty around future travel behaviour and needs brought about by the coronavirus disease pandemic, amongst other sources of deep uncertainty, also provide a significant challenge to assessing which investment options may suit those needs and provide the best returns for the taxpayer. There is a need to consider how best to accommodate this uncertainty in appraisal and provide consistency across the local, regional and national portfolios. This highlights the need and importance of collecting evaluation evidence to better inform these considerations over time.

The Green Book review

- 1.9 At the Spring Budget, the Chancellor of the Exchequer announced a review of the HM Treasury Green Book⁷, the guidance on appraisal across government on which DfT's Transport Analysis Guidance (TAG) is based, to ensure it helps Government take informed decisions in support of levelling-up. The review aims to enhance the strategic development and assessment of projects, consider how to assess and present local impacts and look to provide guidance on how and when to perform analysis of transformative or place-based interventions. It will also consider how project approval decisions are being made and provide clearer guidance and support to practitioners.

The Oakervee Review

- 1.10 The Oakervee Review⁸ of February 2020 provided several recommendations relevant to the appraisal of HS2. The issues raised potentially apply to the appraisal of other schemes and other modes of transport. The assessment of transformational schemes is a challenging task which developments in the Green Book and the Department's enhancements to measuring wider economic impacts, as set out in the AMS and continuing to be developed, will help to facilitate. The review emphasised that reflecting long term expected benefits and costs in the appraisal of HS2 is important for its value for money (VfM) assessment. This brings into focus a wider question about the appropriate timescale to assess the benefits of transport projects

³ <https://www.gov.uk/government/topical-events/budget-2020>

⁴ <https://obr.uk/efo/economic-and-fiscal-outlook-march-2020/>

⁵ <https://obr.uk/forecasts-in-depth/the-economy-forecast/>

⁶ <https://obr.uk/fsr/fiscal-sustainability-report-july-2020/>

⁷ <https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-government>

⁸ <https://www.gov.uk/government/publications/oakervee-review-of-hs2>

in general and whether the full extent of the value of investments is being appropriately captured.

Net Zero and the Transport Decarbonisation Plan

- 1.11 The UK Government is committed to reducing greenhouse gas emissions in line with the 2016 Paris Agreement⁹ within the United Nations Framework Convention on Climate Change. In 2019, the UK passed laws to end its contribution to global warming by 2050¹⁰. The target will require the UK to bring all greenhouse gas emissions to net zero by 2050, compared with the previous target of at least 80% reduction from 1990 levels. This will require additional action to reduce emissions across the whole economy including transport.
- 1.12 In light of this there is a need to update carbon values to be consistent with meeting a Net Zero target by 2050. Furthermore, the Department's document Decarbonising Transport: Setting the Challenge¹¹ of March 2020 sets out the ambition to ensure that transport delivers its contribution to meeting this target. This will have significant impacts on the emissions mix of the future vehicle fleet and the way that transport infrastructure is provided to facilitate these aims. This has clear ramifications for appraisal, ensuring that impacts on carbon are appropriately assessed and valued and presented with prominence to decision-makers.

A route map for adapting the Strategy

- 1.13 We believe the longer-term direction provided by the Appraisal and Modelling Strategy remains sound. However, we also recognise the need to reflect the impact of these events in our approach to investment appraisal and provide a solid basis for further development of TAG.
- 1.14 This document describes the strategic approach we are taking to change management over the course of the year. This allows us to resolve these interlinked issues, and potentially other emerging issues in the round, to provide a consolidated update to TAG at an appropriate time. The aim is to provide confidence about what will be updated and when and implements change in a way which is proportionate and balances the risk of disruption to ongoing analytical work and appraisal with having the best available evidence to support decision-making.

Aligning the timing of changes

- 1.15 We recognise that these strands of emerging evidence and calls for change require marshalling in a controlled and transparent manner to support scheme promoters and analysts planning modelling and analysis to support the development of business cases. The Department has a duty to make available the latest evidence that is pertinent to transport appraisal, but also to provide stability through governance of the change process.
- 1.16 Given the significant challenges, we aim to provide stability in the appraisal framework in 2020/21 by communicating our intentions for managing these changes, starting with this route map and through subsequent engagement across the year, to allow robust planning of future appraisal work. We shall do this by making full use of TAG's established change management protocols (see Annex A) and adapting them where necessary.

⁹ https://ec.europa.eu/clima/policies/international/negotiations/paris_en

¹⁰ <https://www.gov.uk/government/news/uk-becomes-first-major-economy-to-pass-net-zero-emissions-law>

¹¹ <https://www.gov.uk/government/publications/creating-the-transport-decarbonisation-plan>

Considering interlinked issues in the round

- 1.17 The following chapters serve as a "route map" to explain the Department's plan to address these issues. This will involve research activities, consultations and engagement with our stakeholders and other government departments to inform future releases of the guidance together.
- 1.18 Taking a step back also affords us to more easily view these often-interlinked issues in the round. This also allows us to reflect the cross-cutting relationships between the topics and any further, related evidence that emerges during the year that may have an equally significant impact on scheme appraisals.

Providing clarity and support ahead of release

- 1.19 We are keen to build on the success of the Appraisal and Modelling Strategy consultation by stepping up engagement across the year to provide updates to TAG users and supporting them in producing informed appraisals. In particular, we aim to update TAG users on the progress of research, consultations and the associated development of new evidence and guidance. It is the intention that this will provide further clarity on how we plan to manage several changes at once and gives industry advanced sight of changes to allow the opportunity to plan ahead.
- 1.20 We shall hold a series of events and, where appropriate, consultations around the key issues and what users may expect to come into guidance and when. This includes holding a series of TAG digital events in the Autumn and a follow-up event early next year.

2. Scope and implications of appraisal issues

Introduction

- 2.1 The appraisal framework set out in TAG, based on the HM Treasury Green Book, is designed to be comprehensive and provide sufficient detail for decision-makers to assess and compare investment options over the long-term. This covers many different aspects of impacts on the economy, the environment and society. The framework is also intended to be flexible and proportionate, allowing analysts to produce appraisals tailored to specific cases and relevant to local decisions, whilst providing overarching advice and proportionate tools to facilitate often complex analysis of transport systems insofar as possible.
- 2.2 Understanding and deciding how we need to adapt the appraisal framework in an environment of significant uncertainty is challenging. Evidence changes can often have implications across several impacts that are measured and how we value them in appraisals. It is because of this that we are setting out the aim to resolve issues together, where feasible and on a considered basis, and consult with our stakeholders along the way.
- 2.3 This section provides further context on how the issues introduced in Section 1 impact on the appraisal framework and how we plan to take forward the required updates to evidence and methods as they emerge. These may be broadly categorised as follows:
 - **Appraisal in a changing environment:** how we propose to reflect and incorporate emerging evidence into appraisal of the longer-term (economic growth forecasts, uncertainty and scenario planning, appraisal periods, and re-examining appraisal methods where appropriate).
 - **Transformational impacts and levelling-up:** how we propose to support the HMT Green Book review, provide improved guidance around supporting levelling-up objectives in appraisals and enhance our methods of capturing these impacts.
 - **Environmental impacts:** supporting the Transport Decarbonisation Plan and improving evidence on wider environmental issues to ensure prominence of these impacts in appraisals.

Appraising in a changing environment

Accounting for projected lower economic growth

- 2.4 Projections of economic growth play two important roles in transport appraisal. Firstly, the unit values of future benefits, such as time savings, accident costs and health impacts, are typically updated over time in line with real GDP per capita

growth. Secondly, demand for travel tends to be positively correlated with both GDP and population. With more demand, there are both more users who stand to benefit from transport investments, and higher levels of congestion and crowding tend to increase the marginal benefits of relieving them.

- 2.5 In March, the Office for Budgetary Responsibility (OBR) published new economic projections. The long-term assumption of GDP per capita growth has been reduced significantly from an annual average of 1.9% (2.1% in 2068) to 1.4% (1.5% in 2069) between the years 2019-2069. The cumulative impact of this downward revision in per annum growth rates is that by 2069 GDP per capita is 23.7% lower than previously estimated. This represents a much more significant change to long-term growth assumptions than in any previous update of OBR projections.
- 2.6 The OBR have also moved to using the ONS's 2018-based zero net EU migration population projection. The long-term assumption of population growth has been reduced from an average of 0.3% per annum (0.21% in 2069) to 0.15% per annum (0.04% in 2069) between the years 2019-2069. As a result, the UK's population is projected by the OBR to be 8.4% lower by 2069 than previously assumed.
- 2.7 The OBR have made these revisions in response to persistently weak productivity growth since around the time of the financial crisis. This has cast doubt upon the assumption that productivity growth will ultimately recover to around its pre-crisis trend rate.
- 2.8 On 14th July 2020, OBR published further projections as part of their Fiscal Sustainability Report of the medium-term impact of COVID-19 on the economy to 2025. The long-term determinants from the March publication post-2025 remain unchanged.
- 2.9 We are not introducing the March and July OBR forecasts formally into TAG immediately, given the several inter-related issues described in this route map that need to be examined in the round. Nonetheless, Section 4 sets out in more detail that whilst appraisals should only be updated where proportionate to do so, this change is significant enough in its own right to warrant specific testing of its impact across the clear majority of schemes. Alongside this document, we have published a Forthcoming Change notice for the TAG data book that will include the updated values (the March-based long-term determinants incorporating the July FSR update) so that promoters can undertake sensitivity testing or introduce the evidence into new model development work until the point that it is made definitive guidance.

Tackling uncertainty

- 2.10 Tackling uncertainty in appraisal and modelling was one of the five key themes in the Appraisal and Modelling Strategy, recognising that, while understanding and presenting uncertainty has always been a core requirement of TAG, increasing uncertainty about the future meant we could do more to provide advice on the use of scenarios and other analytical techniques to support scheme promoters. As such we made commitments in the AMS to develop an Uncertainty Toolkit and to provide an update on in-house work to develop and pilot a consistent set of scenarios capturing national uncertainties.
- 2.11 Recent events have demonstrated the value that the use of scenarios and wider uncertainty analysis can bring. It is too early for us to fully understand the impacts that COVID-19 may have on future travel demand and travel preferences but tools such as scenarios allow us to explore plausible futures and test how well schemes perform in different future states. Similarly, standard sensitivity testing around

appraisal values provides resilience against potential changes in those values as a business case is developed.

- 2.12 We plan to provide further detail on the use of scenarios by the end of the year, using the Uncertainty Toolkit to set out guidance on when and how scenarios should be used and presented as part of business cases, as well as wider advice on the proportionate treatment of uncertainty in appraisal and modelling. This will also require revisions to TAG unit M4 'Forecasting and Uncertainty'. As part of this work we will be ensuring that the scenarios we have developed in-house effectively capture the additional uncertainties associated with potential impacts of COVID-19 over the long-term.
- 2.13 In the meantime, we recognise that scheme promoters will have questions about how best to capture the uncertainty associated with COVID-19 in business cases which are currently underway. In providing advice we are making the judgement that in the long-term there are likely to be other uncertainties (around technology development and travel behaviour) that may have as significant an impact on travel demand as well as the pandemic. Therefore, we will strengthen the expectation in guidance that sensitivity testing is presented more prominently in business cases as standard, alongside commentary around the potential impacts of COVID-19 and its impact on demand assumptions. More detailed scenario analysis may be appropriate and schemes submitting business cases directly to DfT are invited to engage directly with scheme sponsors to agree a suitable approach.
- 2.14 Our engagement plans are detailed in section 3. In developing our guidance on uncertainty and scenarios, we intend to engage with the Joint Analysis Development Panel and our delivery partners and will seek views more widely on our proposals for the uncertainty toolkit ahead of publication including through a digital event in the Autumn.

Setting an appropriate appraisal period

- 2.15 To compare the costs and benefits of a scheme, the appraisal period, the period over which streams of costs and benefits are estimated, should 'cover the period of usefulness of the assets encompassed by the options under consideration'¹². Transport investments, particularly those intended to have transformational effects, can have very long-lasting impacts. Most of the railway network dates to Victorian times and, once established, new road links have a strong tendency to last. So long as they are appropriately maintained, new transport schemes have the potential to deliver benefits well into the future.
- 2.16 TAG recommends an appraisal period of 60 years from the scheme opening year for schemes expecting to have indefinite lives, as it helps provide a consistent basis for comparing the benefits of different schemes and options. In practice there is a large degree of challenge to appraising over a long time horizon. Long-term uncertainty in both demand (how people travel) and supply (how the transport system will look) are considerable and has practical implications for modelling and forecasting. For appraisal, the effect of the discount rate, based on social time preference, means that benefits in the very long-term are also substantially discounted.
- 2.17 Nonetheless, we accept that conceptually there are reasonable arguments for looking at the issue of value in the very long-term, for example residual asset values, given that many transport systems are maintained and renewed in such a way to be operational for a significant amount of time. For instance, the Oakervee Review

¹² Green Book, paragraph 5.10.

emphasised the view that reflecting long term expected benefits and costs in the appraisal of HS2 is important for its Value for Money (VfM) assessment.

- 2.18 We plan to launch a consultation on the length of the appraisal period over the Summer, covering all modes and schemes, including those with a typically shorter useful life. This consultation will explore the issues and inform our decision on whether to bring forward changes to the recommended appraisal period in TAG.

Re-examining our appraisal methods

- 2.19 The less optimistic long-term economic outlook and planned consultation on the appraisal period raises some fundamental questions about how we profile and value costs and benefits across the appraisal period. We plan to examine whether the recently announced large reduction in long-term forecast GDP growth might warrant reconsideration of our approach.
- 2.20 This will sit alongside other ongoing AMS workstreams to ensure our fundamental appraisal methods remain fit for purpose, such as handling appraisal under land use change (i.e. use of the "rule of half") and reviewing our key transport modelling parameters within TAG.

Improving evidence on scheme cost uncertainty

- 2.21 Another element of appraisal evidence we are actively considering as part of the AMS is on the estimation of scheme costs at decision-points throughout the appraisal process.
- 2.22 Optimism bias is the demonstrated systematic tendency for appraisers to be overly-optimistic about key parameters. Current guidance in TAG Unit A1.2 recommends that uplifts are applied to capital cost estimates in the economic case.
- 2.23 We are close to finalising the optimism bias research outlined in the Appraisal and Modelling Strategy. This has investigated historical evidence on optimism bias in a number of different dimensions, expanding the current evidence base (which is focused on optimism bias on capital costs) to cover project operational costs, delivery schedules and benefits. We are planning to bring forward Forthcoming Changes to update TAG in parallel with other changes, to reflect the findings of this research, in time for definitive release in February 2021.

Transformational impacts and levelling-up

Accounting for levelling-up and transformational impacts in appraisal

- 2.24 At the Spring Budget 2020 the Chancellor announced a review of the Green Book to ensure it helps Government take informed decisions in support of levelling up. The review will enhance the strategic development and assessment of projects, consider how to assess and present local impacts and look to provide guidance on how and when to perform analysis of transformative or place-based interventions. It will also consider how project approval decisions are being made and provide clearer guidance and support to practitioners.
- 2.25 The Review team is engaging with a broad range of interested parties, including academics and Green Book users, to help shape the proposed changes, ensuring they are robust and practicable. The review intends to conclude alongside the next Spending Review, expected later in the year. We would work to incorporate any TAG changes required in light of the review as soon as reasonably possible. In the

meantime, we will support scheme promoters in using the flexibilities that already exist within TAG to make the case for schemes which support levelling up objectives.

2.26 A number of features of existing guidance can be used to support the development of a business case for a scheme with levelling up objectives:

- Guidance on capturing wider economic impacts allows scheme promoters to present local economic impacts alongside national impacts. It requires scheme promoters to develop an economic narrative which explains how addressing a transport constraint in the specific local context may drive wider economic impacts, including in support of local economic growth objectives.
- Distributional analysis provides tools for considering impacts on particular groups in society. This may be of particular relevance to the levelling up agenda and the analysis may be extended to analyse impacts on other transport users and groups in society.
- DfT's Rebalancing Toolkit provides a framework for the development of an evidence-based narrative to demonstrate how a scheme will deliver its strategic objectives in targeting economic growth in left-behind areas to underpin the Strategic Case. This stresses the importance of alignment with the evidence presented in the economic case and the economic narrative.

2.27 Work is continuing on a key theme in the AMS of modelling and appraising transformational investments and housing. Several work streams are focusing on improving forecasting in this area, collection of evaluation evidence and producing guidance that supports promoters in demonstrating how proposals may encourage local and regional growth.

2.28 An example of this is where we have been taking forward research with the aim of strengthening the evidence base around productivity impacts arising from agglomeration and re-estimating the agglomeration elasticities currently in TAG. This is a technically challenging area and the research is being peer reviewed before a decision is made whether to incorporate the new elasticity values in our guidance. We will publish our decision as a part of the TAG updates process later in the year, and meanwhile will continue engaging with our stakeholders.

Environmental impacts

Reducing Greenhouse gas emissions

2.29 Two principle objectives of DfT are to support the creation of a stronger, cleaner, more productive economy and make sure transport is safe, secure and sustainable. Critical to achieving these objectives is to mitigate and actively reduce the impact transport has on the environment. The Department's Transport Decarbonisation Plan due to be published in 2020, will:

"...set out in detail what government, business and society will need to do to deliver the significant emissions reduction needed across all modes of transport, putting us on a pathway to achieving carbon budgets and net zero emissions across every single mode of transport by 2050¹³."

2.30 This clearly indicates the importance of accurately assessing greenhouse gas (GHG) emissions in transport appraisal.

¹³ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/878642/decarbonising-transport-setting-the-challenge.pdf

- 2.31 The value government places on changes in GHG emissions is regularly reviewed to ensure an approach which is fit for purpose and based on the latest scientific evidence. Government is in the process of updating the appraisal system to take account of our Paris Agreement commitments and the 2050 net zero target.
- 2.32 In recognition of this, the Department for Business, Energy and Industrial Strategy (BEIS) issued guidance to departments on the interim approach for using carbon values in policy appraisal. The guidance advises scheme promoters to illustrate the potential impact of placing a higher value on GHG emissions by reporting a high carbon values sensitivity test using the latest published carbon values which can be found in supplementary Green Book guidance.¹⁴ This sensitivity will also be accounted for in a forthcoming update to the Marginal External Costs (MECs) chiefly used in non-highway appraisal.¹⁵
- 2.33 The interim guidance will apply until updated carbon values are published. Resultingly, we have published this guidance as a Forthcoming Change to TAG alongside this document so that analysts working up appraisals for scheme business cases can test the impact of the interim values. Later in the year we will incorporate updated values when completed by BEIS into TAG through provision of a forthcoming change document, giving promoters further time to prepare to include these values in a full appraisal.
- 2.34 The Department intends to update the vehicle mix forecasts to be used in appraisal this year using the latest evidence and based on current policies. These will reflect updated modelling assumptions, including the introduction of new tighter CO₂ emissions standards for cars, vans and HGVs to be implemented in 2025 and 2030 and new sales figures showing a further decline in sales of diesel cars compared to 2018, and updated consumer choice modelling of the take-up for ultra-low emissions vehicles, which has resulted in updated electric vehicle and fuel efficiency forecasts.
- 2.35 Furthermore, we will review the available software for calculating carbon impacts. As part of this we will explore the opportunities for quantifying impacts not typically measured, such as embedded carbon.

Accounting for the value of the natural environment

- 2.36 The physical and cultural characteristics of the land provide a range of benefits to society. Transport interventions may impact upon these benefits positively or negatively. The Department currently provides supplementary Value for Money guidance for monetising the value of different broad categories of landscape¹⁶, whilst TAG currently provides guidance on how to undertake a more qualitative approach to assessing landscape impacts using the environmental capital approach.
- 2.37 Whilst landscape impacts are a prominent aspect of the appraisal process, the Department intends to produce expanded guidance within TAG and update the existing evidence base to allow more specific quantification of landscape impacts in an appraisal, whilst still allowing for use of the qualitative environmental capital approach.
- 2.38 The existing supplementary guidance is based on a 2001 meta-analysis of willingness-to-pay studies¹⁷. The assumptions underpinning the calculation of these values will be updated to bring them in line with best practice as per the ONS and

¹⁴ <https://www.gov.uk/government/publications/valuation-of-energy-use-and-greenhouse-gas-emissions-for-appraisal>

¹⁵
¹⁶ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/885722/value-for-money-supplementary-guidance-on-landscape.pdf

¹⁷ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/627487/value-for-money-supplementary-guidance-on-landscape.pdf

Defra's Principles of Natural Capital Accounting¹⁸. This includes updating the assumptions of GDP per capita growth, population growth, income elasticity of willingness-to-pay for landscape preservation, discount rate, and the appraisal period, as recommended in research commissioned by DfT¹⁹.

- 2.39 We will publicly consult on our proposals to improve the methodology for estimating these values, and the implications for transport appraisal, during this year.
- 2.40 In parallel, we will also outline our plans to consult on the introduction of an Ecosystem Services (ESS) approach to environmental impact appraisal. This will cover landscape, townscape, the historic environment, biodiversity and the water environment. For landscape, this will recommend the unbundling of landscape value into its constituent services: recreation; visual amenity; air quality; noise; local climate regulation; and carbon sequestration. By valuing individually each constituent ecosystem service, future appraisal is expected to better account for the differing impacts of transport schemes upon each ecosystem service, and to measure impacts in the best available physical units. In identifying the timing and distribution of impacts, the approach can also help to inform mitigation options.

¹⁸ <https://www.ons.gov.uk/economy/environmentalaccounts/methodologies/principlesofnaturalcapitalaccounting>

¹⁹ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/824186/valuation_of_landscape_impacts_of_transport_interventions.pdf

3. Responding to the challenge

Delivering updates

- 3.1 This section summarises the description of the issues and handling of each in Section 2. Our aim is to resolve these issues as judiciously as possible, through appropriate research where necessary and through consultation and engagement with our stakeholders and partners.

Timescales for implementation

- 3.2 We have set an ambition for collecting together all the issues described and provisionally aim to make a consolidated release of formal guidance changes at the beginning of next year. In practice, the aim is to complete the necessary research and consultation this year to produce any values and guidance changes where necessary, prior to introducing them into formal guidance in February 2021.
- 3.3 Our aim is to be open about change and evidence as it emerges. Our engagement plans are described later in this section, describing how we see engagement and collaboration as a core part of delivering this and the AMS in general. At appropriate times, we shall share changes proposed to TAG through Forthcoming Change notifications (in line with the Orderly Release Process (ORP) set out in Annex A), which will detail the expectations around timings and their use, as well as allowing analysts the option of undertaking sensitivity testing on them (in line with the Proportionate Update Process, see Section 4).
- 3.4 As set out in this route map, we also seek to provide stability in appraisals, whereby disruptive changes do not happen in close sequence. We intend to reserve the subsequent May 2021 release date for minor business-as-usual updates to evidence as required. We will need to make a judgement on the handling and release of substantial issues that either cannot be resolved by February 2021 or emerge between now and then. TAG users will be made fully aware of the status of these issues well in advance and through the channels of engagement described later in this section.
- 3.5 Table 1 provides a summary of the projected timings of releases associated with the issues identified in this route map. It also details the timings of associated consultations and engagement events aimed at providing our stakeholders with a clear view of progress and forthcoming updates.
- 3.6 The following part of this section provides more detail on how we aim to resolve each individual topic and information on the planned engagement events across the year and into next.

Table 1 Planned timings of future updates and associated engagement events

Year	Month	Publications and releases	Engagement activities	
2020	Jun	Release of Route map and Forthcoming Change notifications on OBR projections, carbon values and fleet assumptions.		
	Jul	Provision of TUBA and WITA updated software files (one version to align with May 2020 Data Book and a Forthcoming Change version including updated OBR, carbon and fleet assumptions)		
	Aug		Consultations on appraisal periods, landscape values and Ecosystem Services approach	TAG Digital Events
	Sep			
	Oct	Potential releases of Forthcoming Change notifications where finalised and as appropriate		
	Nov		Follow-up stakeholder workshops or training sessions where the need is identified	
	Dec			
2021	Jan	Latest release data for Forthcoming Change notifications ahead of formal TAG release		
	Feb	Next TAG formal release date		Engagement event on TAG and continuing AMS programme
	Mar	Potential releases of Forthcoming Change notices for any standard evidence changes as required and, only where in-line with ORP principles (sufficient time to allow to promoters to prepare and minimising disruption), updated evidence changes for residual issues set out in this route map not yet released	Forward engagement on AMS programme	
	Apr			
	May	Formal TAG release date (reserved for minor changes, ensuring no large step-change from previously-published changes)		
	Further	Continued work on AMS programme		

Planned updates for February 2021

- 3.7 The table below shows the topic areas identified in this route map that we intend to progress across the year and where appropriate bring to a conclusion before the next TAG release date.

Table 2 Summary of plans to take forward individual appraisal issues

Issue	Impacts on	Actions
Long-term growth forecasts	Appraisal and modelling	Subject to any further changes to the OBR growth forecasts across the year, we intend to release them into the next TAG release.
Green Book Review	Appraisal, potentially modelling	Responding to the review with potentially expanded guidance on how to better present and articulate how schemes may influence levelling-up. Any relevant quick-win changes to guidance may be incorporated in the next TAG release, with potentially longer-term implications being incorporated into the AMS.
Potential impacts on appraisal accounting	Appraisal	We aim to examine the potential for any changes required to the appraisal framework resulting from the change in growth forecasts and the Green Book Review. Any relevant quick-win changes to guidance may be incorporated in TAG, with potentially longer-term work being incorporated into the AMS.
Appraisal period	Appraisal	Consultation in Summer 2020; the outcome will depend on the outputs from the consultation. Should the consultation result in a definitive recommendation for changing guidance, this may be incorporated in the next TAG release.
Optimism bias	Appraisal	Close to finalising research results, after which we plan to bring forward new values for inclusion in guidance.
Agglomeration elasticities	Appraisal, potentially modelling (SEM ²⁰)	A peer review of research is currently being completed and decisions on changes to guidance will be made subsequent to its completion. Any changes judged to be necessary may be incorporated into guidance, whilst further

²⁰ SEM are specialist Supplementary Economic Models that may be used to assess wider economic impacts.

Issue	Impacts on	Actions
		work will proceed as per the AMS programme.
Uncertainty Toolkit	Appraisal and modelling	We are preparing the toolkit to supplement uncertainty analysis tools, to become part of the TAG suite of appraisal/modelling tools.
Scenarios guidance	Modelling that informs appraisal	We shall strengthen guidance to provide expanded advice on testing national and local uncertainties via use of scenario analysis to add to existing local guidance based on planning scenarios.
COVID-19 impacts	Modelling that informs appraisal	Research and data gathering is required to understand the potential impacts of coronavirus on travel demand. The next TAG release will include updates to TAG M4, covering the use of scenarios, which will also consider the impacts of COVID-19 alongside other uncertainties.
Carbon values	Appraisal	Subject to timing of BEIS completion of the update of the values. We currently expect that they will be ready for the next TAG release.
Fleet mix assumptions	Appraisal and modelling	Updated fleet mix assumptions based on current policies are published alongside this document.
Landscape values	Appraisal	Consultation on new values in Summer 2020; we intend to align these changes with others once complete and expect values to be ready for the next TAG release.

Longer-term research

- 3.8 Several areas of work described in this route map are either subject to review or have known longer-term implications that we will need to continue to research into next year. Agglomeration and ecosystem services are work streams underway as part of AMS, whilst the Green Book review and the emerging evidence from COVID-19 may have longer-term implications for appraisal and forecasting.

Table 3 Summary of anticipated longer-term developments

Issue	Impacts on	Actions
COVID-19 impacts and scenarios	Modelling that informs appraisal	Research and data gathering is required to understand the potential longer-term impacts of the coronavirus pandemic. We will incorporate this feature into our AMS work on providing guidance on scenarios and the forecasting of trip-making in the National Trip End Model (NTEM) development programme.
Ecosystem Services approach	Appraisal	Consultation to be held in Summer 2020 and potentially further consultation in 2021 when draft guidance is prepared. This is a longer-term priority as part of AMS, so aim to produce guidance after February 2021.
Green Book Review, appraisal accounting and agglomeration elasticities.	Appraisal, potentially modelling	For each of these topics, there is potential for further work to be required running after the next release of TAG updates. This will depend on the outcomes of reviews and evidence-gathering in these particular areas.

Appraisal and Modelling Strategy workstreams

- 3.9 In addition to these work streams, progress continues on the other components of the Appraisal and Modelling Strategy programme. We broadly expect this programme to continue as set out in the April 2019 publication. Whilst several elements of the programme are already being delivered or are ongoing, the increased focus on the issues identified as priorities in this route map may mean that it is inevitable that some elements in the current AMS programme will require reprioritisation. We shall update stakeholders on progress at the events planned later in the year.

Engagement and consultation

Engaging on issues in this route map

- 3.10 Engaging with our stakeholders and users of our tools and guidance was central to the development of the Appraisal and Modelling Strategy and maintaining close contact will be more important than ever as we work together to address the challenges discussed in the preceding chapters.
- 3.11 As we look ahead, we are excited about the opportunities presented by the widespread adoption of digital technologies which should enable us to communicate more efficiently and frequently. We intend to hold a series of digital events in the Autumn to share progress on the delivery of the potential changes described in this route map and the progress on other priorities in the Appraisal and Modelling Strategy that we are endeavouring to continue alongside these updates.
- 3.12 We plan to hold an additional event to discuss the forthcoming changes that we have developed over the year prior to their formal release. We have also identified

bespoke consultations to run in the Summer and Autumn on appraisal periods and ecosystem services. The need to formally consult may arise as the work proceeds on the issues in this route map. We will publicise these events sufficiently in advance where that is the case.

Continued engagement on the AMS programme

- 3.13 The digital events planned for Autumn will also provide a progress update on the AMS programme more broadly. Several quick-win elements of the programme are ongoing or due to deliver. Progress has also been made on several longer-term issues in both the modelling and appraisal areas.
- 3.14 These events will allow reaching out to a broader user base. For instance, we would encourage experienced users of TAG to make their more junior colleagues aware of these events. If sufficient demand is communicated to us, we are prepared to offer a bespoke event for those in the early stages of their career in modelling and appraisal.
- 3.15 For the TAG digital events, we would welcome any further suggestions for topics from our stakeholders to ensure sufficient coverage of user needs as best we can. We suggest highlighting any particular areas of the Appraisal and Modelling Strategy topics that are currently in our work programme as follows:
- **People and place** - freight, landscape, induced demand, urban realm, congested values of time, people-centred analysis, wellbeing, the active mode appraisal toolkit (AMAT).
 - **Modelling and appraising transformational investments and housing** - agglomeration research, Supplementary Economic Modelling, aligning the strategic and economic cases, the housing toolkit and sustainable development.
 - **Reflecting uncertainty over the future of travel** - the uncertainty toolkit, scenarios, optimism bias.
 - **TAG accessibility** - signposting and simplified guidance products; proportionality, including examples of good practice and development of case studies to support the application of TAG.
 - **Modelling and appraisal tools** - the future of NTEM, NTM v2 assurance and transparency, innovations in modelling and alternative techniques (e.g. developments in agent-based modelling), evaluation, introducing the new version of DIADEM.

The Joint Analysis Development Panel

- 3.16 The Joint Analysis Development Panel (JADP) provides academic and practitioner insights and challenge on a wide variety of modelling and appraisal issues and forms a core component of our academic and professional engagement.
- 3.17 The panel is co-chaired by DfT's Chief Analyst, Amanda Rowlatt, and Professor Peter Jones, University College London. Following a public appointments exercise last year there are now eleven external members.
- 3.18 The JADP annual report for 2019-20, which summarises the panel's discussions over the course of the year, is published alongside this route map²¹. Topics have included rebalancing the economy, reflecting uncertainty in appraisal, housing and transport analysis, the development of modelling tools to support appraisal and, more recently, the Green Book review and environmental impact appraisal.

²¹ <https://www.gov.uk/government/publications/joint-analysis-development-panel-annual-report-2019-to-2020>

4. Accounting for new evidence in scheme appraisal

Introduction

- 4.1 This section describes the current expectations described in TAG around adopting evidence base changes into analysis and the use of sensitivity testing in the interim before formal changes to guidance are introduced.
- 4.2 More specifically, also described are the expectations around the two forthcoming changes the Department has introduced alongside this document: the incorporation of the latest OBR long-term growth forecasts and the interim carbon values advice provided by BEIS. The reader should refer to the forthcoming change documents for the detailed account of what is expected in the analysis. A summary is provided here.
- 4.3 The Department expects that, until promoters are able to incorporate this evidence formally into their analytical models, sensitivity tests using the new OBR and high carbon values are undertaken and presented in business cases. These tests can be combined where feasible.

General TAG recommendations

- 4.4 TAG provides for instances when the evidence base and best practice advice changes from those currently established through the Orderly Release Process and Proportionate Update Process described in Annex A.
- 4.5 In general, it is expected that a joint judgment is made between scheme promoters and their scheme sponsors regarding both the scope of appraisal at defined decision-points and whether it is proportionate to include any forthcoming changes to the evidence base in the analysis. This judgment should be based on the balance between the potential materiality of any changes in evidence to the schemes at hand and the resource and logistical implications of updating the scheme modelling developed to that point.
- 4.6 Where updated evidence emerges, it is often possible for analysts to use existing modelling assets or proportionate appraisal tools to make a judgement on the potential impacts of those changes without having to complete a full analysis. This is often referred to as "sensitivity testing". This can provide decision-makers with a sense of the plausible impacts of the new evidence which will assist their consideration of the proposal at hand, whilst retaining a proportionate analytical approach, ahead of the time when the evidence is formally updated in TAG.
- 4.7 This can include changing a partial set of transport model inputs and running them through the model, and/or providing a more limited set of appraisal outputs, focusing on those impacts more susceptible to change. Regardless of the exact approach, it is

important to provide a narrative around the potential impacts, particularly for those appraisal elements that are not directly tested.

Representing OBR changes

- 4.8 As described in Section 2, a Forthcoming Change notification has been issued alongside this document explaining in detail how analysts may incorporate the new OBR forecasts into their appraisals or how sensitivity tests are expected to be undertaken in this case. The updates to the OBR long-term projections of population and economic growth are expected to have a material impact on most scheme appraisals.
- 4.9 It is important to clarify that this is a relative comparison between the existing growth forecasts in TAG and the new OBR forecasts. Transport scheme proposals with robust business cases are still expected to offer good value for money and positive returns for society.
- 4.10 It is also important to clarify our expectations around the new OBR evidence until its formal release in TAG. OBR projections provide the most authoritative view of long-run economic growth in the UK. We therefore expect incorporation of these forecasts via sensitivity tests, or directly where feasible, to represent the expected direction of travel for TAG, rather than being seen as a worst-case or pessimistic scenario. Appropriate weight should therefore be placed on this in business cases.

Testing the appraisal impact

- 4.11 Alongside the forthcoming change document on the growth forecasts, the Department is also providing an updated Data Book containing these values, and updated software data files. This will allow relatively straightforward sensitivity testing on the output appraisal values from the central, low and high growth scenarios, which should be presented alongside the business case as a minimum, unless it is agreed to be immaterial or disproportionate to do so.
- 4.12 It is important to note that this appraisal-only sensitivity testing is likely to understate the full impact of the OBR updates, because no account is taken of the impact on demand. This should be made clear when reporting the results from the sensitivity test.

Testing the demand impact of GDP updates through transport models

- 4.13 In principle, changes in GDP growth will have direct implications on demand as represented by the transport model, or other quantitative analysis undertaken to test the performance of the scheme.
- 4.14 As explained in the TAG proportionate update process, any updates to new evidence should be made proportionately. We would not expect already calibrated, validated and fit-for-purpose models to necessarily be updated and recalibrated immediately following the publication of updated data. In new or redeveloped model forecasts, it is recommended that scheme promoters incorporate the new OBR economic growth forecasts. This is to ensure the best available evidence for future decision-points.
- 4.15 Until the updated growth forecasts become formally incorporated into TAG, where proportionate, promoters should undertake a sensitivity test on the impact of the new GDP forecasts by running them through the model on the core scenario. The low and high growth scenarios should then be pivoted around this updated core scenario. The updated values should also then be applied to these model outputs in the appraisal (i.e. through TUBA or equivalent) and presented alongside the business case as a

sensitivity test. This allows the impact of the updated OBR GDP forecasts on both demand and appraisal values to be tested. This should be done in preference to just applying the values in the appraisal where possible.

Accounting for new population forecasts in the future

- 4.16 The Department provides travel demand forecasts for use in transport modelling through its National Trip End Model (NTEM) data set. The Appraisal and Modelling Strategy sets out our plans to undertake a review of NTEM with a view to producing a significant redevelopment of the model and associated TEMPRO software as part of the AMS programme²².
- 4.17 Since this is under development, the Department does not intend to publish updates to NTEM forecasts in the near-term to immediately align with the updated national-level ONS population projections used in the latest OBR forecasts. Until new guidance or NTEM forecasts are provided to accommodate this, promoters are not expected to directly accommodate the new population assumptions in their modelling and appraisal.

Representing interim carbon advice

- 4.18 BEIS have set out the expectation that all appraisals should make use of the existing high carbon values that are currently provided alongside central and low values in the TAG data book and in the TUBA software.
- 4.19 Incorporating this into appraisals is a straightforward case of ensuring that appraisal results are produced by using the high carbon values in TUBA, or equivalent. As described in the Forthcoming Change release alongside this document, the Department expects this to be done in the cases where it is applicable.

Accounting for other emerging evidence

- 4.20 As discussed in section 3, there are a range of potential TAG changes on the horizon, not all of which will be resolved in time for the February 2021 release point. Scheme promoters may wish to develop their own sensitivity tests to account for the likely impact of these potential changes to the evidence base on appraisal results, as well as any new evidence at the local level that may be important to examine at certain stages of business case development²³. Any such sensitivity tests should be agreed between the scheme promoter and scheme sponsor. We would expect robust supporting evidence to be presented for any alternative appraisal or modelling approaches.
- 4.21 Promoters should also consider the possible impacts of the COVID-19 pandemic on their appraisals. As noted in section 2, scheme promoters submitting business cases to DfT should liaise with scheme sponsors to agree a suitable approach.

²² We have undertaken a Discovery as part of this project: <https://www.gov.uk/government/publications/national-trip-end-model-discovery-report>. We welcome continued collaboration on development of NTEM from our stakeholders and plan to complete scoping and specification of the work by the end of the year.

²³ TAG Unit M4 on Forecasting and Uncertainty currently has guidance on maintaining an uncertainty log and allows for testing a variety of different local assumptions to appraise proposals under a range of different plausible circumstances.

Annex A: Change management processes in TAG

The Orderly Release Process

- A.1 In order to keep the evidence base for transport analysis up to date, we occasionally need to refresh the values in the guidance to reflect more recent changes, trends and research. The Orderly Release Process²⁴ is the change management process in TAG. It provides advance notice of changes to guidance to allow more certainty of the timetable for changes and early sight of forthcoming revisions. This allows scheme promoters and sponsors to plan the work required to implement the changes.
- A.2 The Orderly Release Process also affords some stability to analysis and appraisals in an environment where multiple changes in the evidence base may occur or be foreseen to have the prospect of occurring in relatively quick succession. This can be particularly pertinent to longer term projects or programmes and emphasises the benefit of producing thorough uncertainty analysis to explore the impact of potential evidence base changes and how sensitive proposals are to them.

The Proportionate Update Process

- A.3 While sound planning of business case development, assisted by the Orderly Release Process, can minimise the cost, resource, and time needed to ensure a business case remains in step with latest evidence, it is nonetheless reasonable for project sponsors to decide what updates to business cases it is proportionate to make when TAG, or other guidance / evidence changes.
- A.4 The Department expects that such decisions should be made on a scheme by scheme basis and be based on balancing the need to ensure decisions are based on up-to-date evidence with the need to support decision makers in delivering their programme. This should involve reasonably balancing (a) the greater time, cost, and/or resource needed to deliver programmes, with (b) the quality of the analysis submitted to assist the decision required, including its robustness against potential challenge from all sources.
- A.5 The Proportionate Update Process²⁵ described in TAG provides advice on how to judge whether it is proportionate to update existing analytical work and recommends seeking support from the scheme sponsor when making that judgment.

²⁴ <https://www.gov.uk/government/publications/change-management-in-webtag-the-orderly-release-process>

²⁵ <https://www.gov.uk/government/publications/webtag-tag-proportionate-update-process>